

We claim:

1. An implantable fuel cell assembly comprised of means for converting fat to glycerol and fatty acid, means for converting glycerol to hydrogen, means for converting fatty acid to hydrogen, means for converting a bodily fluid to a gas selected from the group consisting of hydrogen, oxygen, and mixtures thereof, and fuel cell means for producing electricity from hydrogen and oxygen.
2. The implantable fuel cell assembly as recited in claim 1, wherein said implantable fuel cell assembly is disposed beneath the skin of a human being.
3. The implantable fuel cell assembly as recited in claim 2, wherein said implantable fuel cell assembly is disposed near fat cells.
4. The implantable fuel cell assembly as recited in claim 1, wherein said implantable fuel cell assembly is comprised of means for harvesting fat cells.
5. The implantable fuel cell assembly as recited in claim 4, wherein said means for harvesting fat cells is comprised of a microknife.
6. The implantable fuel cell assembly as recited in claim 1, wherein said means for converting said fat to said glycerol and said fatty acids is comprised of a fat-permeable material.
7. The implantable fuel cell assembly as recited in claim 6, wherein said means for converting said fat to said glycerol and said fatty acids is comprised of lipase enzyme.

8. The implantable fuel cell assembly as recited in claim 7, wherein from about 3 to about 10 percent of said lipase enzyme is present, based upon the total mass of said lipase enzyme and said fat.

9. The implantable fuel cell assembly as recited in claim 8, further comprising a porous material with an average pore size of less than about 10 nanometers.

10. The implantable fuel cell assembly as recited in claim 1, wherein said means for converting said fatty acids to hydrogen is comprised of beta oxidase enzyme.

11. The implantable fuel cell assembly as recited in claim 10, wherein said means for converting said fatty acids to hydrogen is comprised of oxaloacetate.

12. The implantable fuel cell assembly as recited in claim 1, further comprising a glycerol fuel cell.

13. The implantable fuel cell assembly as recited in claim 12, wherein said glycerol fuel cell is comprised of an anode and anode enzyme disposed on said anode, wherein said anode is configured and arranged for electroxidizing an anode reductant in the presence of the anode enzyme.

14. The implantable fuel cell assembly as recited in claim 13, wherein said glycerol fuel cell is comprised of a cathode spaced apart from said anode and cathode enzyme disposed on said cathode, wherein said cathode is configured

and arranged for electroreducing a cathode oxidant in the presence of said cathode enzyme.

15. The implantable fuel cell assembly as recited in claim 1, wherein said gas is oxygen.

16. The implantable fuel cell assembly as recited in claim 1, wherein said fuel cell assembly further comprises a rechargeable power supply.

17. The implantable fuel cell assembly as recited in claim 16, wherein said fuel cell assembly further comprises a piezoelectric means for converting electricity into mechanical motion.

18. The implantable fuel cell assembly as recited in claim 16, wherein said fuel cell assembly further comprises electrostrictive means for converting electricity into mechanical motion.